CLAIMS

1. A preparation process of aromatic ketones by Friedel-Crafts acylation reaction in an ionic liquid, between a Friedel-Crafts aromatic substrate and a Friedel-Crafts acylating agent, characterized in that the ionic liquid has the formula (I) and it is used in the absence of any other catalyst and/or solvent; wherein $[Q]^+$ is selected from the group consisting of a substituted-imidazolium cation, a substituted-pyridinium cation, an ammonium cation, and a phosponium cation.

$$[Q]^+ [CF_3SO_3]^- \qquad (I)$$

2. The process according to claim 1, wherein $[Q]^+$ is a substituted-imidazolium cation.

3. The process according to claim 2, wherein the ionic liquid is selected from the group consisting of 1-ethyl-3-methylimidazolium trifluoromethanesulfonate, 1,3-diethylimidazolium trifluoromethanesulfonate, and 1,3-dimethylimidazolium trifluoromethanesulfonate.

4. The process according to claim 3, wherein the ionic liquid is the 1-ethyl-3-methylimidazolium trifluoromethanesulfonate.

5. The process according to claim 1, wherein the Friedel-Crafts acylating agent is selected from the group consisting of a carboxylic acid halide, a carboxylic acid anhydride, a carboxylic acid ester and a carboxylic acid.

6. The process according to claim 5, wherein the Friedel-Crafts acylating agent is a carboxylic acid anhydride.

7. The process according to any of the claims 5-6, wherein the acylating agent is selected from the group consisting of acetic acid anhydride, propionoic acid anhydride, butanoic acid anhydride, isobutanoic acid anhydride, pentanoic acid anhydride, benzoic acid anhydride, chloroacetic acid anhydride, acetyl chloride, propanoyl chloride, butanoyl chloride, benzoyl chloride, and chloroacetyl chloride.

8. The process according to claim 1, wherein the Friedel-Crafts aromatic

substrate is selected from the group consisting of aromatic benzenoid compounds, aromatic benzenoid-fused compounds, and heteroaromatic compounds resulting from substitution of CH groups by N atoms in the previous ones; all these substrates being optionally substituted by substituents which are stable under Friedel-Crafts reaction conditions, or which have been suitably protected to be stable.

9. The process according to claim 8, wherein the Friedel-Crafts aromatic substrate is selected from the group consisting of benzene, toluene and anisole.

10. The process according to claim 9, wherein the Friedel-Crafts aromatic substrate is anisole.

11. The process according to claim 1, wherein the Friedel-Crafts acylating agent is attached to the Friedel-Crafts aromatic substrate, being the carbonyl group of the Friedel-Crafts acylating agent separated of the Friedel-Crafts aromatic substrate by a aliphatic chain from 2 to 4 carbon atoms, so an intramolecular ring closure is done yielding a (5-7)-membered ring.

12. The process according to any of the claims 1-11, wherein the reaction is carried out at a temperature between room temperature and 150 °C.

13. The process according to claim 12, wherein the reaction is carried out at a temperature between 70 and 100 °C.